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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/120,608 07/22/98 PAGE

L IJ-0005

EXAMINER

IM22/0410

E I DU PONTE DE NEMOURS AND COMPANY
LEGAL PATENTS
WILMINGTON DE 19898

SHOSHOLC

ART UNIT

PAPER NUMBER

1714

DATE MAILED:

04/10/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/120,608

Applicant(s)

Page et al.

Examiner

Callie Shosho

Group Art Unit

1714

☒ Responsive to communication(s) filed on Jan 20, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 6-12 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 6-12 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. All outstanding rejections except for those described below have been overcome by applicants amendment and 132 declaration filed 1/20/00.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (EP 0851014) in view of Ma et al. '698 (U.S. 5,085,698).

The rejection is adequately set forth in paragraph 10 in the action mailed 10/18/99, Paper No. 5, and is incorporated here by reference.

Response to arguments regarding 103 rejections

4. Applicants arguments filed 1/20/00 have been fully considered but with respect to the 103 rejection disclosed in paragraph 2 above, they are not persuasive.

Specifically, applicants argue that:

- (a) the hydrosol disclosed by Ma et al. '014 is not a binder and is not film-forming.
- (b) Ink composition of Ma et al. is not washfast.

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With respect to argument (a), it is agreed that Ma et al. '014 does not explicitly disclose that the hydrosol is a binder. However, given that the hydrosol disclosed by Ma et al. is structurally identical to the binder disclosed in the present claims, it would have been obvious to one of ordinary skill in the art that the hydrosol disclosed by Ma et al. '014 would intrinsically function as a binder.

The applicants have submitted a 132 declaration (see Paper No. 8) which discloses that dispersants and binders are not interchangeable due to their different functions. However, nowhere in Ma et al. '014 does it say that the hydrosol is a dispersant, and thus, the 132 declaration is moot with respect to Ma et al. '014.

While there is no explicit disclosure in Ma et al. '014 that the hydrosol is film-forming, given that the hydrosol disclosed by Ma et al. is structurally identical to the binder disclosed in the present claims, i.e. graft copolymer comprising hydrophobic and hydrophilic monomers identical to those presently claimed, and further given that the film-forming ability of a polymer is a function of its structure, it would have been obvious to one of ordinary skill in the art that the hydrosol disclosed by Ma et al. '014 would intrinsically function as a film-former.

As further evidence to support the position that the hydrosol of Ma et al. '014 functions as a binder, attention is drawn to page 2, lines 5-6 of Ma et al. '014 which discloses that the hydrosol improves the smear resistance of the ink. In order to improve smear resistance, the colorant must be tightly bound to the substrate so that the ink will not smear or smudge upon

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contact. Therefore, it is natural to conclude that the hydrosol improves smear resistance by binding the colorant more tightly to the substrate and thus functions as a binder.

With respect to argument (b), applicant argues that the ink of Ma et al. '014 is not inherently washfast simply because the ink contains vehicle, pigment, surfactant, and graft copolymer as presently claimed. However, it is not just that the ink of Ma et al. '014 generally contains the same ingredients as presently claimed, but that the ingredients themselves are identical to those presently claimed. The ink of Ma et al. '014 is believed to be inherently washfast not because Ma et al. '014 contains a graft copolymer, surfactant, pigment, dispersant, and aqueous carrier medium as does the presently claimed ink, but that the graft copolymer of Ma et al. '014 is identical to the presently claimed graft copolymer in that it contains identical types and amounts of hydrophobic monomers and hydrophilic monomers, the surfactants disclosed by Ma et al. '014 are fluorinated surfactants as presently claimed, etc.

5. It is noted that the 103 rejection set forth in paragraphs 8-9 of the office action mailed 10/18/99 is withdrawn in light of applicants amendment and 132 declaration filed 1/20/00.

Specifically, Held et al. disclose a washfast ink which comprises aqueous carrier medium, pigment, graft copolymer binder and dispersant. However, there is no disclosure of the specific graft copolymer binder as presently claimed.

In order to overcome this deficiency, Ma et al. '751 was applied, in combination with Held et al., in order to teach the specific graft copolymer. However, the 132 declaration is

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persuasive in showing that Ma et al. '751's graft copolymer would have been used for its ability to function as a dispersant and not a binder as required in the present claims. See paragraph 5 of the declaration.

There is no disclosure in Ma et al. '751 that the dispersant functions as a binder. Further, pages 1-2 of the 132 declaration disclose that dispersants and binders are well known to perform very different functions and that because of the different functions, one of ordinary skill in the art would not consider it obvious to use a dispersant as a binder. Thus, there is no motivation for one of ordinary skill in the art to use Ma et al. '751's dispersant as a binder in the ink of Held et al.

6. Upon updating the searches, the following reference came to the attention of the examiner.

Hesler et al. (U.S. 5,821,283) discloses that a "dispersant also functions in an ink as a binder to fix the pigment to the substrate". It is further disclosed that in order for a polymer to satisfy its dispersant/binder functions, the polymer must have suitable solubility in water.

However, the polymers of Hesler et al. are not graft copolymers as presently claimed or disclosed in Held et al. or Ma et al. '751. Further, the present claims require hydrophilic side chains containing macromers such as polyethyleneoxide acrylate, while the polymers of Hesler et al. contain structurally different hydrophilic monomers such as acrylic acid. This is significant in light of Hesler et al.'s disclosure that the solubility in water affects the ability of the polymer dispersant/binder to function. There is no disclosure in Hesler et al. that graft copolymer

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dispersant containing macromolecular side chains would function effectively as a binder.

Moreover, Hesler et al. could not properly be combined with Held et al. since the former prefers the polymeric dispersant to be uncrosslinked (col.4, lines 21-22), whereas the later utilizes a crosslinker, presumably, to crosslink the dispersant (col.6, line 21ff.).

In light of the above, Hesler et al. is not a relevant reference against the present claims.

7. It is noted that the two European references have been stricken from the IDS filed 12/21/99 as redundant given that they were already cited on PTO-892 mailed 5/10/99 and 10/18/99, respectively.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner can normally be reached on Monday-Thursday from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

C.S.

Callie Shosho
4/5/00

Vasu Jagannathan
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